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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,181	08/27/2003	Masayuki Ohta	259052003300	6464

25226 7590 10/22/2007
MORRISON & FOERSTER LLP
755 PAGE MILL RD
PALO ALTO, CA 94304-1018

EXAMINER

VAN ROY, TOD THOMAS

ART UNIT	PAPER NUMBER
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2828

MAIL DATE	DELIVERY MODE
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10/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/650,181

Applicant(s)

OHTA ET AL.

Examiner

Tod T. Van Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5 and 10-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,10-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The examiner acknowledges the amending of claims 1 and 5.

Response to Arguments

Applicant's arguments with respect to claims 1 and 5 have been considered but are moot in view of the new ground(s) of rejection.

Please see the enclosed enlarged fig.1 of Sugano in reference to the proceeding remarks.

The Examiner notes that the C markers of Sugano point-contact with each other at their respective corners. The Examiner recognizes that the Applicant's markers make contact with each other only at a single point, but the phrase "point-contact with each other at the corners" is not believed to be limited to only 1 point of contact for the entire marker.

The Examiner further notes that claims 14-15 have been previously rejected in view of Ohbuchi, and motivate the use of a saw-tooth pattern, which would make contact at only one point from marker to marker.

Please see below for an updated rejection to the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 5, and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugano (JP 63136687) in view of Goto (2002/001327).

With respect to claim 1, Sugano teaches a method for manufacturing a semiconductor laser device, comprising the steps of: forming electrode patterns arranged in a plurality of rows (fig.1) extending in a first direction (top to bottom of figure) on an upper surface of a semiconductor wafer having at least a light emission layer (fig.3 #3), the electrode patterns having opposed to two edges extending in the first direction (left and right sides of dashed electrode patterns); cutting the resultant semiconductor wafer for a predetermined width to yield a plurality of semiconductor bars (abs.), and sectioning the semiconductor bars in desired sizes to form semiconductor laser devices each having a pair of cleavage surfaces (cleaved along dotted line), the surfaces being parallel to a second direction and distant from each other by a resonator length (abs., fig.1 L's), wherein the formed electrode patterns are continuous with each other in the first direction (fig.1), each electrode pattern including a series of markers

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having a periodical pattern (markers are the "C" gaps in the electrode patterns, series of markers forms periodical pattern) which is continuous one marker to the next in the first direction, the markers being formed on one or both of the edges of the electrode patterns (each formed on an edge on either side of the electrode pattern), and a minimum unit of the periodical pattern has an overall length in the first direction equal to L/n and not greater than the resonator length (marker not greater than resonator length L), wherein L is the resonator length and n is a positive real number not smaller than one, the first direction being a direction along the resonator length, the second direction being perpendicular to the first direction and each laser device being cut or sectioned to have a length which is an integral multiple of the length of a marker (abs., marker is $1*L$), and wherein each of the markers has corners at both ends in the first direction and adjacent markers point-contact with each other at the corners of their ends (C markers point contact at their respective corners). Sugano does not teach the markers to be asymmetric in shaped when bisected in the chip width direction. Goto teaches the used of markers wherein one side of the electrode pattern is asymmetric relative to the other (fig.5, indented shoulder portion near arrow 19a). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the electrode pattern of Sugano with the asymmetric electrode pattern of Goto in order to distinguish forward and backward device directions (Goto, [0028], which when added to Sugano would create asymmetric markers when bisected in a chip width direction).

With respect to claim 5, Sugano teaches a semiconductor laser device, comprising: a semiconductor layer portion including at least a light emission layer (fig.3

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#3) and a pair of cleavage surfaces the surfaces being parallel and distant from each other by a resonator length (fig.1 cleaved along dotted line); and an electrode pattern piece formed on an upper surface of the semiconductor layer portion (fig.1 dashed lines), the electrode pattern piece having opposed two first edges extending in a first direction (fig.1 top and bottom) and opposed two second edges extending in a second direction along the pair of cleavage surfaces (fig.1 left and right), wherein the two second edges come in contact with the pair of cleavage surfaces (fig.1 cleaved along dotted line, so in contact with the surface), each electrode pattern piece including a series of markers having a periodical pattern formed on one or both of the first edges (markers are the "C" gaps in the electrode patterns, series of markers forms periodical pattern, each formed on an edge on either side of the electrode pattern), a minimum unit of the periodical pattern having an overall length in the resonator length direction equal to L/n and not greater than a resonator length, wherein L is the resonator length and n is a positive number not smaller than 1 (markers not greater than resonator length), the first direction being a direction along the resonator length, wherein the markers can be used to form laser chips of different resonator lengths, and wherein each of the markers has corners at both ends in the first direction and adjacent markers point-contact with each other at the corners of their ends (C markers point contact at their respective corners). Sugano does not teach the markers to be asymmetric in shaped when bisected in the chip width direction. Goto teaches the used of markers wherein one side of the electrode pattern is asymmetric relative to the other (fig.5, indented shoulder portion near arrow 19a). It would have been obvious to one of

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ordinary skill in the art at the time of the invention to combine the electrode pattern of Sugano with the asymmetric electrode pattern of Goto in order to distinguish forward and backward device directions (Goto, [0028], which when added to Sugano would create asymmetric markers when bisected in a chip width direction).

With respect to claim 10, Sugano teaches the marker length is between $1/5$ and 5 times the width (fig.1 length approx. 2 times the width).

With respect to claim 11, Sugano teaches the wafer is cut in predetermined widths to yield a plurality of semiconductor bars extending in the resonator length direction, and the plurality of semiconductor bars are cut in predetermined resonator lengths (fig.1, abs.)

With respect to claim 12, Sugano teaches the ability to cut the semiconductor bars into different resonator lengths, yielding a plurality of different semiconductor laser devices (abs.).

With respect to claim 13, Sugano teaches one of the semiconductor bars is cut in integral multiple lengths of the overall length of the marker (abs.).

Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugano and Goto in view of Ohbuchi (US 6611542).

With respect to claims 14-15, Sugano and Goto teach the semiconductor laser device as outlined in the rejection to claim 5, but do not teach the markers to be shaped like the teeth of a saw or an isosceles triangle. Ohbuchi teaches a semiconductor laser

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device with electrode markers wherein it is taught that markers are of an isosceles triangle, or saw tooth, shape (fig.1). It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the rectangular markers of Sugano and Goto with the isosceles, saw tooth, markers of Ohbuchi as a matter of engineering design choice, since the shape of the marker is not crucial, only that it has distinguishable dimensions (Ohbuchi, col.8 lines 12-14, col.3 lines 39-45).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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